

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-050133

(43)Date of publication of application : 23.02.2001

(51)Int.Cl.

F02M 51/06
F02M 21/02
F02M 61/04
F02M 61/16

(21)Application number : 11-223420

(71)Applicant : HITACHI LTD
HITACHI CAR ENG CO LTD

(22)Date of filing : 06.08.1999

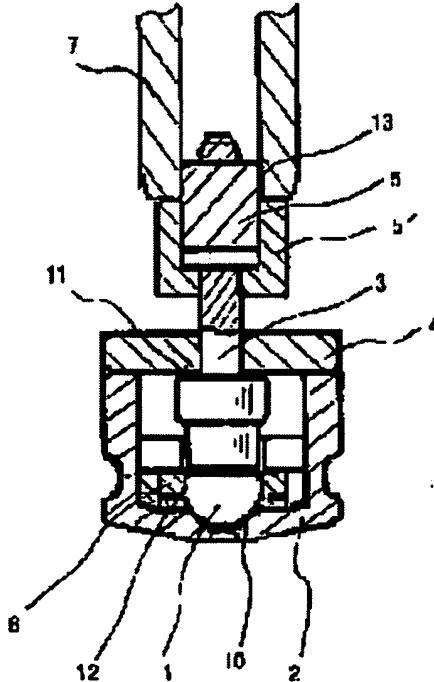
(72)Inventor : TERAKADO KAZUYOSHI
KAGIYAMA ARATA
BABA NOBORU
YAMAGUCHI SHIZUKA
SOMA MASAHIRO
SHIMIZU SHUICHI

(54) ELECTRONIC FUEL INJECTION VALVE

(57)Abstract:

PROBLEM TO BE SOLVED: To solve abrasion on an abrasion part, stabilize gas fuel, and enable supplying control by forming a surface reforming layer having an abrasion resistance on surfaces of an abrasion surface composed of respective sliding parts of a valve element and a valve seat, the valve element and a guide ring, a needle and a fixing iron core, and the needle and a stopper.

SOLUTION: Surface reforming process is executed on surfaces of respective abrasion parts of a sheet part 10 of a valve element 1 and a valve seat 2, a collision part 11 of a needle 3 and a stopper 4, an abrasion part 12 of the valve element 1 and a lower end needle guide 6, and an abrasion part 13 of an upper end needle guide 5 and a fixing iron core 7. For example, D.C. glow discharge is carried out on a surface of the valve element 1, and a plasma nitriding process is executed. On the other hand, a film of carbide



) and nitride ceramics as transition metals having the thickness of few µm are formed on the surface in which plasma nitriding process is executed, in order to improving durability of the abrasion part. Namely, after plasma nitriding process is executed, CrN is coated by means of an activated reactive evaporation method of a physical evaporation method having a good adhesion with a base material.

LEGAL STATUS

[Date of request for examination] 17.09.2001

[Date of sending the examiner's decision of rejection] 01.04.2003

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]